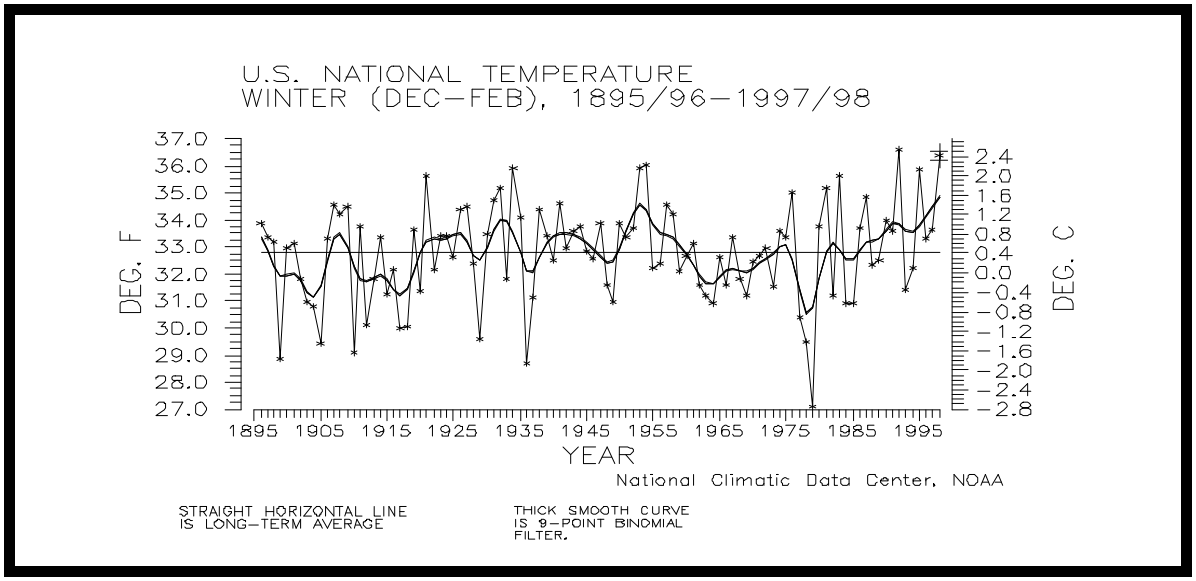
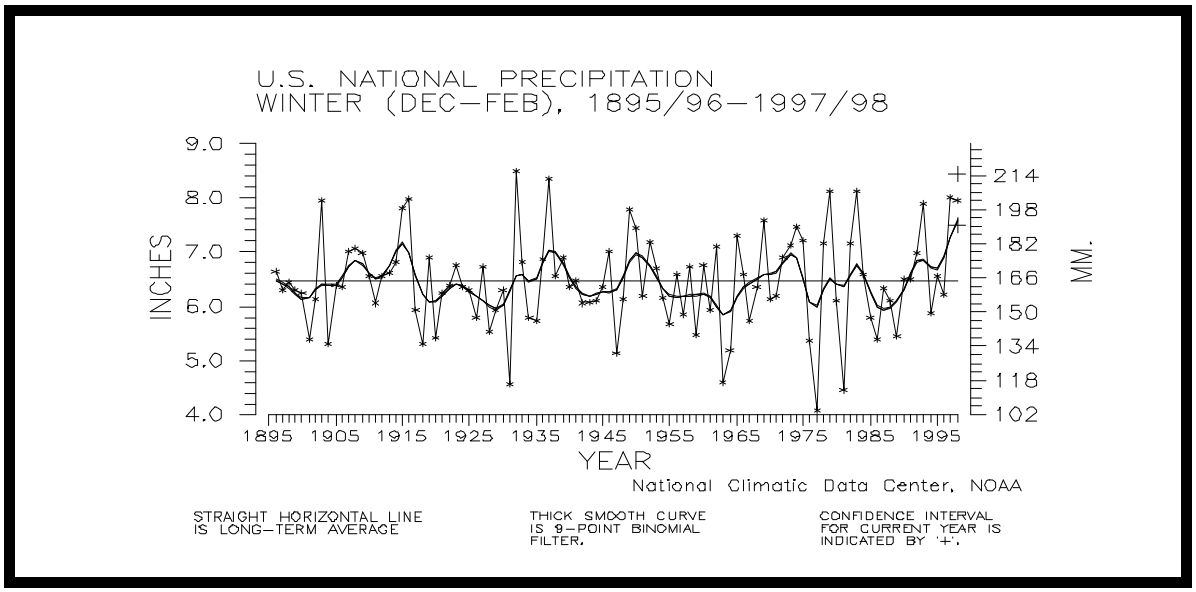
Monthly Activity Report

February 1998





Based on preliminary data, the winter season (Dec 97-Feb 98) was the second warmest such season since 1895 (Top Figure). For most of the winter season the polar front remained north of the Canadian border, which prevented cold arctic outbreaks from dropping down into the contiguous United States. This is a characteristic El Niño signature.

Preliminary data indicate that winter 1998 (Dec 97-Feb 98) was the seventh wettest such season on record (Bottom Figure). Due to an abnormally strong El Niño episode, the subtropical storm track was much more active and located further north than normal. This allowed for copious amounts of Pacific moisture to interact with the west coast and more intense storms to affect the gulf coast and southeastern states, where numerous new winter season precipitation records occurred.

DIRECTOR'S HIGHLIGHTS

LCD's Available Via NNDC On-Line Store

The monthly Local Climatological Data (LCD) publications are now available through the National Oceanic and Atmospheric Administration's National Data Center's (NNDC) On-Line Store which can be accessed via the National Climatic Data Center's homepage. The publication is in PDF (Portable Document Format) and requires the customer to use Adobe's free Acrobat Reader 3.0 software to view/ download the publication. In the first month of operation, over 200 LCD's were sold through this system. LCD's available via the NNDC On-Line Store start with July 1996 and run through the most recent month available (e.g., February 1998 pubs should be available by the end of March).

NCDC and RCCs Provide On-Line Data and Reports Related to El Niño

The National Climatic Data Center (NCDC) has several new or updated on-line systems with recent data, images, and reports related to El Niño and its effects. These include: 1.) High resolution satellite images of recent storm systems; 2.) U.S. hourly surface data; 3.) U.S. and global daily data; 4.) Climate Visualization, which provides graphs of U.S. and global data; 5.) Geostationary Operational Environmental Satellite (GOES) browse images; 6.) Report on the eastern U.S./Canada flooding and ice storm in January; 7.) The Climate Variations Bulletin; 8.) U.S. radar composite images; 9.) Special Sensor Microwave/Imager monthly image products. Each of the above is available via the satellite, radar, or climate resources pages on NCDC's web site. The Western Regional Climate Center (WRCC) spent much of February following, documenting, and responding to inquiries about the extremely active El Niño-driven storm pattern in California, and other phenomena elsewhere in the West, especially in Hawaii where they are experiencing exceptionally dry conditions. The winter can be followed in an ongoing manner under "This winter, ..." on the WRCC El Niño web page, www.wrcc.dri.edu/enso/enso.html.

Climate Change/Weather Extremes Web Page

The National Climatic Data Center (NCDC) placed a new web page on-line entitled "Climate Change and Weather Extremes." The page includes links to numerous NCDC reports and papers related to climate change or weather extremes, and links to data sets, satellite images, and data access systems useful in studying climate change and weather extremes. It also includes links to many external sources of information related to natural disasters, and links to overseas sites with related information. This new web page addresses a need for a one-stop location where web users can find data, images, and other information on this subject. The address is: http://www.ncdc.noaa.gov/ol/climate/climateextremes.html.

Vegetation CD-ROM

The National Climatic Data Center, in conjunction with the National Environmental Satellite, Data, and Information Services' Office of Research and Applications (ORA), produced a CD-ROM containing over 12 years of global monthly vegetation cover derived from the Advanced High Resolution Radiometer instrument flown onboard the National Oceanic and Atmospheric Administration's polar orbiter satellites. In recent years, ORA has developed the Third Generation Level C (monthly) Vegetation Index data and regenerated the data back to April 1985. This CD-ROM (version 1.0) includes digital and imagery files of each month of the Normalized Difference Vegetation Index data for April 1985 through December 1997.

Metropolitan Area Climate Summary

The National Climatic Data Center will develop a new climatological product, the Metropolitan Area Climate Summary. The new product is aimed at the urban user, presenting them with high priority data values in a timely manner. This will require the integration of several different data streams including some not currently utilized. Several Regional Climate Centers have volunteered to assist with the development.

Second Annual Satellite Applications/Education Conference

The National Climatic Data Center hosted the Second Annual Satellite Applications/Education Conference February 24-26, 1998, at Asheville's Grove Park Inn. The agenda included sessions on access to satellite data via the World Wide Web, satellites in the classroom, natural hazards monitoring using satellite data, satellites and the private consultant, and satellites in our everyday world. The conference was well supported by local and state educators and students. Several hands-on work sessions were conducted for students at the National Climatic Data Center (NCDC). In addition, tours of NCDC were conducted for all conference participants. Presentations gave examples of how satellites affect people's lives and businesses every day. A highlight of the conference was a presentation showing examples of what new software can do to help in such diverse processes as time series imagery, tying data bases together in Geographic Information System presentations, browse capabilities, and quality control. Speakers from the Office of Satellite Data Processing and Distribution, the Office of Research and Applications, the National Geophysical Data Center, and the National Oceanic and Atmospheric Administration's Coastal Services Center were present, as well as others from private firms and other government agencies.

Mission Support Services

The Mission Support Services Request For Proposals for the National Climatic Data Center (NCDC) was released in February, and an on-site Bidders' Conference was held at the Center February 18 and 19. The current contract expires on September 30, 1998. Eleven companies and 24 bidders attended. Bids are due to the contracting office in Norfolk, VA by April 2, 1998. The NCDC Source Evaluation Board will begin evaluating each proposal on April 6, 1998.

CLIMATE DATA AND INFORMATION SERVICES

✦ Data Base Development

Pioneer Fund Proposals

The National Climatic Data Center submitted six interdivisional Pioneer Fund proposals representing areas of interest to the National Environmental Satellite, Data, and Information Services (NESDIS) and the National Oceanic and Atmospheric Administration.

Maury Commemorates YOTO

In recognition of the International Year of the Ocean (YOTO), the National Climatic Data Center (NCDC) has produced a National Oceanic and Atmospheric Administration (NOAA)-YOTO CD-ROM entitled "The Maury Collection, Global Ship Observations, 1792-1910." This CD contains nearly 1.5 million historical observations of the global surface marine environment, with the majority taken during the period 1820-1860. The

observations include air and sea temperatures, currents, pressure, cloud cover, present weather and wind direction/speed. Data were digitized from paper copies of hand written forms via U.S.-PRC Protocol on Cooperation in the Field of Marine and Fishery Science and Technology, and the Joint Coordination Panel for Data and Infor-mation Cooperation facilitated by NOAA and the government of China. NCDC will include the data in the Comprehensive Ocean Atmosphere data set.

Extreme Snowfall Return Period Statistics

The National Climatic Data Center (NCDC) has added a new data set to NCDC's digital tape archive. This data set contains observed snowfall extremes and derived return period statistics for over 8,000 Cooperative stations in the contiguous U.S. and Alaska. Data were provided to the Federal Emergency Management Agency to aid in federal snow disaster declarations. Data include: one-day, two-day, and three-day extreme snowfall, and August-July seasonal total snowfall. The elements include observed extreme value, and snowfall amount corresponding to four return periods: 10-year, 25-year, 50-year, and 100-year. Also included are number of years with non-missing data, and number of years with non-zero data. Statistics are based on data from 1948-1996.

Satellite Snow

The National Climatic Data Center received funding from the National Environmental Satellite, Data, and Information Services' Office of Research and Applications for the development of a "day-one" snow cover product from the Advanced Microwave Sounding Unit sensor being flown on NOAA-K. Launch is anticipated during the summer of 1998; algorithm development will take place using the Special Sensor Microwave/Imager instrument as ground truth, in subsequent months.

New Hourly Database

The Northeast Regional Climate Center (NRCC) began building a new comprehensive database of hourly surface observations. This new database will be routinely updated so that data for the period of record through the present will be available to staff members for answering infor-mation requests and for use in research projects.

Snow Normals

A new data set, 1961-1990 Normals for Snowfall and Snow Depth for 3,779 Stations in the U.S., has been added to the National Climatic Data Center's (NCDC) TD-9641 digital library archive. Of these, 258 are First Order hourly stations and 3,521 are Cooperative Network. Monthly and annual normals are provided for mean total snowfall, mean number of days with snowfall, and mean number of days with snow depth (snow cover). Monthly normals are also provided for median, first quartile, and third quartile of total snowfall and number of days with snowfall and snow depth, and monthly normals are provided for median daily snowfall and snow depth. The archive includes a station metadata file.

NOAA-K Archive Test

The National Climatic Data Center is participating in a National Environmental Satellite, Data, and Information Services NOAA-K product systems test by archiving simulated NOAA-K Level 1b data and metadata with the New Archive System and the IBM 3494 tape library. Government and contractor personnel worked with Information Processing Division personnel to resolve I/O errors experienced early in the test period, which ran from February 23-27. Another test period is planned for early March.

Colonial Era Ends

The National Climatic Data Center's (NCDC) Colonial Era Archive Project, led by Dr. Tom Peterson, ended officially on February 9, 1998. Over the last several years, NCDC staff, UNC Asheville, contractors, and Texas state climatologist Dr. John Griffiths extracted monthly precipitation and max/min temperature data for

881 stations from less developed countries' colonial periods using 984 volumes of European Colonial Era publications. As Dr. Griffiths' team at Texas A&M finishes digitizing them and they get incorporated into the Global Historical Climatology Network, these data will provide a significant digital climate record for a large period/region of our earth that was previously very data sparse.

✦ Data and Information Distribution

Web CliServ Well Received

Web Climate Services (CliServ) Version 2.0 was incorporated into the National Climatic Data Center's (NCDC) Home Page on January 27th and received its 10,000th user 7 days later. The system is averaging about 1,500 hits per day with some days close to 3,000. Web CliServ allows on-line queries of NCDC's many metadata systems from a single access system, and expands NCDC's PC CliServ from an internal NCDC system to WWW access. The system can currently be accessed from the NCDC Home Page via "Search," "What's New," "What's Hot," "In the Spotlight," or the "Climate Data Inventories" page.

Web Maps

New Special Sensor Microwave/Imager products derived by Alan Basist of the National Climatic Data Center and personnel at the Office of Research and Applications are viewable at http://www5.ncdc.noaa.gov/plwebapps/plsql/ssmi main. They provide Anomaly and Full Field Global and North American maps of Snow Cover, Surface Wetness, and Satellite Land Surface Air Temperature. Data start in November 1997 and will be continued on an experimental basis. Initial user comments have been favorable.

February Customer Service

February 1998 customer service operations evidenced the normal seasonal upturn in data requests. Customer service statistics for February 1998 showed a 43 percent increase in data orders, a 9 percent gain in telephone calls, and a 24 percent rise in letter receipts as compared to January 1998 totals. Growing preference for electronic mail as contact media is illustrated in the 27 percent increase during February 1998 as compared to same month totals a year ago. The emerging growth of the new National Oceanic and Atmospheric Administration's National Data Center's On-Line Data Store Web Site is evidenced by the 3,289 unique users who visited the site during February 1998, which demonstrated a 75 percent increase in users over January 1998 totals. Regional Climate Centers report that direct user contacts in February totaled 3,169. Requests serviced by their on-line systems numbered 8,750; "hits" on their Web pages totaled over 1.6 million.

NNDC Server Project

The National Oceanic and Atmospheric Administrations's National Data Centers' (NNDC) server technical team representatives met in Boulder, CO, on February 19th to discuss the goals and plans for the NNDC Pilot Project and the NNDC Server project. It was agreed that the systems recently demonstrated by the National Geophysical Data Center (NGDC) fell into the initial goals set out for the NNDC Server project. The team was then able to begin discussing the NGDC system and all the other data server related projects that could potentially assist with the overall design of an NNDC Server. The team developed an initial design for the NNDC Server. Marada will complete their analysis of the NOAAServer system by mid-March. The NNDC Server technical team will meet in late March for an intense 3-day system design session with the goal of presenting a conceptual design to the NNDC working group by mid-April.

NEXRAD Level III Data Loaded to HDSS

The National Climatic Data Center has initiated a procedure to routinely load Next Generation Weather Radar (NEXRAD) Level III data to the

Hierarchial Data Storage System (HDSS). The HDSS Level III data files will provide a backup for the data currently available only on disk. Level III digital products can be extracted and provided to customers more efficiently from the HDSS than from the optical disks. HDSS storage of Level III data is the next step in development of procedures to provide images and data to on-line users and allow users to order Level III data on-line through the Customer Order Management Processing System.

1997 Atlantic Tropical Storms Report Available

The National Climatic Data Center (NCDC) has released a technical report entitled, "1997 Atlantic Tropical Storms: Views from the NOAA Satellites." This report contains a brief overview of the National Oceanic and Atmospheric Administrations's (NOAA) satellites, narrative discussion on each named Atlantic tropical system in 1997, and satellite imagery of each storm at peak strength. The Next Generation Weather Radar storm total precipitation imagery and a rainfall plot are also included for Hurricane Danny.

✦ Satellite Data Requests

New Cloud Detection Algorithm Under Development

The National Aeronautics and Space Administration's Marshall Space Flight Center's Global Hydrology and Climate Center contacted the National Climatic Data Center to obtain four months of the Geostationary Operational Environmental Satellite (GOES)-8 satellite-derived Supplemental Automated Surface Observation System Cloud Cover product. The product will be used as an independent data set for the validation of a new cloud-filtering (i.e., cloud detection) algorithm under development. The data is regarded as invaluable in that it will provide an objective comparison against the operational cloud detection technique.

✦ Interesting Requests

Paper Corporation Facing Plant Closures

One of the nation's leading paper manufacturers contacted the National Climatic Data Center (NCDC) to obtain precipitation data to be used in an upcoming briefing. Apparently, two southeastern paper mills are being sold and the company hopes to use this climatological data to brief several interested buyers. NCDC provided *Annual Climatological Summaries* for Canton and Forest City, NC, along with the publication *Climatography No. 81 Monthly Station Normals of Temperature, Precipitation and Heating and Cooling Degree Days (1961-1990).*

Energy Savings

A regional distributor for energy conservation products contacted the National Climatic Data Center (NCDC) to obtain climatological data for northwestern Pennsylvania. The merchant is installing surge suppressors which are guaranteed to save 20 percent on energy costs for industrial and commercial electrical customers. The distributor wishes to obtain heating and cooling degree data for the period January-December 1997 in order to compare with historical degree day data the energy company has onsite. On-line data from NCDC's web page was offered to the customer for the period in question.

Babes In The Woods

The Reading, PA, Police Department contacted the National Climatic Data Center (NCDC) to obtain meteorological data to be used in prosecuting the parents of a two year old in a child negligence case. At two o'clock in the morning, a local resident found the child who was lost, frightened, and cold in a rural section of Reading. The child was taken to the hospital and treated for dehydration and hypothermia. Hourly surface weather observations from Reading proved the child was lucky to be alive as temperatures were in the lower 20's to upper teens that evening.

✦ Technology Applications

Modeling Soil Moisture

The High Plains Climate Center (HPCC) staff are working closely with the U.S. Department of Agriculture/NRCS on soil moisture monitoring and have recently joined the Soil Moisture and Temperature Team. Six monitoring sites were established in 1997 and analysis of the data is underway. HPCC will use its Soil Moisture Model to simulate the 1997 season. Model estimates will be compared to the in situ measurements.

✦ Regional Climate Centers

Regional Climate Center Interactions

Steve Doty, the National Climatic Data Center's (NCDC) Regional Climate Center (RCC) Program Leader, visited two of the Centers beginning a series of site visits that will take him to all six Centers by Summer. He met with the staff and administration at the Western Center in Reno, NV, and the Southern Center in Baton Rouge, LA. A "Site Visit Check List" was prepared to guide the discussions. The overwhelming impression is that the Centers are doing a tremendous amount of work on limited resources. They are on the forefront of climate services, climate monitoring, and database build. A site visit report will be issued after the completion of all visits.

Regional Center Directors and NOAA Planning

The Regional Climate Center Directors participated in the National Oceanic and Atmospheric Administration's Administrator's Strategic Planning Workshop. New initiatives suggested: Regional Climate Center program inclusion in the National Environmental Satellite, Data, and Information Services Data Centers' line item (FY 2000 and outyears); recovery of Colonial climate records and analogs; and strengthen the Cooperative Network so that this critically important climate data stream is enhanced.

Assessing Wind Energy

The High Plains Climate Center (HPCC) is working with the Lincoln Electric System in developing a wind energy monitoring program for the Lincoln service area. February 1998 was the first month of data collection. If the monitored site is shown to have sufficient wind and the rate payers are interested, the Lincoln Electric System will install one or two wind generators by 2000. This will be a step in reducing CO2 emissions.

Climate Product Review Workshop

Plans are being made for a joint Regional Climate Center (RCC)/National Climatic Data Center (NCDC) workshop entitled "Climate Product Review Workshop" to be held in late June 1998 in Asheville, NC. The focus of the workshop is to conduct a thorough review of the climate products offered by each of the RCCs, NCDC, the National Weather Service, and other interested agencies. The goal is to identify new products required to meet the demands of today's user as well as to identify those products no long required. A tentative agenda has been distributed.

Cooperative Work to QC County Daily Weather Data Set

The High Plains Regional Climate Center (HPCC) is working with the North Central Regional Committee on Climate and Agricultural Landscape Productivity Analysis and Assessment. This committee is made up of members from Land Grant colleges in the North Central Region. A unique daily weather data set at a county level is being developed by the committee and quality control (QC) testing has begun at the HPCC.

Adding Additional Climate Stations

The Southeast Regional Climate Center (SERCC) has made arrangements with the University of Florida's Agricultural Engineering and Biological Sciences Department to download data from the Florida Agricultural Weather Network. Data will

be added to the SERCC database for better spatial detail for climate analysis and research in interior Florida. SERCC also acquired climate data from the 68 Southeastern Forest Technology Stations.

New Gridded Daily Temperature and Precipitation Data Set

To support internal research that often must consider regional climate conditions in the context of national conditions, the Midwestern Climate Center (MCC) recently completed development of a gridded daily temperature and precipitation data set that covers the entire coterminous U.S. A mapping program was developed to provide access to graphical products. Although originally developed for internal use, this product has recently been made available to the region's state climatologists. The address of this web based product is: http://mcc2.sws. uiuc.edu/gmap.

Participation at Great Basin Regional Climate Change Workshop

Kelly Redmond, Western Regional Climate Center Regional Climatologist, presented the opening science talk "Climate Change Issues in the Mountainous and Intermountain West" at the Rocky Mountain/Great Basin Regional Climate Change Workshop, held in Salt Lake City, UT. The importance of better understanding our past and current "natural" climate and the necessity for more regional detail were among issues stressed.

Talking Climate with Insurance Adjustors

Kelly Redmond, of the Western Regional Climate Center, gave a talk to a meeting of insurance adjustors on "Weather and Climate and the Insurance Industry." This industry is especially sensitive to weather and climate, and may drive a significant fraction of global change activities.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

✦ Working Groups/ Committees/Meetings

Senior Scientist Activities

Tom Karl, the National Climatic Data Center's (NCDC) Senior Scientist, participated in the North American Observing System Council meeting to discuss climate requirements. He reported on the results of various climate analyses related to proposed changes in the upper air network. He and David Easterling are also Invited Members of the Synthesis Team for the National Climate Assessment Program, a U.S. advisory panel to the Office of the President on climate change.

Tom, assisted by other NCDC personnel, led a meeting of the National Oceanic and Atmospheric Administration's (NOAA) Council on Long-Term Climate Monitoring in Philadelphia February 19-20, 1998. During the meeting, several high priority topics were discussed for NOAA support, including: routine assessments of major NOAA Climate Observing Networks; upgrading the Hourly Precipitation Network to replace punched paper tape mechanisms with modern recorders; identifying replacements for the COOP Network Max-Min Temperature System; placing proposed Global Climate Observing System COOP stations on the GTS; maintaining the global Dobson Ozone Network; and a number of other recommendations.

AVHRR Seminar Presentation at NASA/GSFC

On February 27, 1998, Kathy Kidwell, of the National Climatic Data Center's Satellite Services Branch in Suitland, MD, presented a seminar on the Advanced Very High Resolution Radiometer (AVHRR) instrument at the National Aeronautics and Space Administration/GSFC in Greenbelt, MD. Ms. Kidwell gave a one-hour presentation to about ten graduate students from the University of Maryland's Departments of Meteorology and Geography. The presentation featured an overview of the instrument, design considerations, generation of Global Area Coverage and Local Area Coverage, High Resolution Picture Transmission data, the Level 1b format, calibration procedures, and some applications of AVHRR data.

METOP Ground Systems Meetings

The National Climatic Data Center (NCDC) participated in a National Environmental Satellite, Data, and Information Services (NESDIS) Meteorological Operational Satellite (METOP) Ground Systems Team meeting on February 12 to discuss reviews of European Meteorological Satellite's (EUMETSAT) METOP Ground System requirements documents. NCDC reviewed documents for the End User and Archive requirements, and submitted Review Item Discrepancy (RID) forms to the NESDIS METOP Ground Systems Team leader for consolidation with other NESDIS RIDs.

Customer Order Management Processing System

Customer Order Management Processing System (COMPS) team members from the National Climatic Data Center, the National Oceanographic Data Center, the National Geophysical Data Center, System Acquisition Office personnel, National Oceanic and Atmospheric Administration's National Data Center's On-Line store representatives, and Marada employees traveled to Virginia Beach, VA, February 23-26 to attend an Incremental Design Review for the Build Two version of COMPS. UNISYS contractors presented screens, operational scenarios, and database layouts to describe the system as it will be implemented in June. Government personnel reviewed all system aspects that were presented.

✦ Interactions with NOAA Line Offices

NCDC Climate Divisional Data Used in NOAA Economic Analysis

A researcher with the National Oceanic and Atmospheric Administration's (NOAA) Office of Planning obtained monthly divisional temperature and precipitation data from 1895 to the present using the National Climatic Data Center's (NCDC) web site. The researcher is using the monthly temperature and divisional data for the 344 U.S. climate divisions as part of an economic analysis, which will evaluate the value of the long range El Niño Southern Oscillation forecasts. Divisional data will be used as one evaluator of the forecasts.

NOAA Hurricane Researchers Use NCDC NEXRAD Level II Radar Data in Extreme-Event Research Studies

A team of researchers from the National Oceanic and Atmospheric Administration's National Hurricane Center, Hurricane Research Division, obtained Next Generation Weather Radar (NEXRAD) Level II data to study a variety of climatic events from the 1996-1998 period. The researchers are using NEXRAD Level II data in studying severe weather in the outer rain bands of Tropical Storm Josephine across parts of Florida in 1996, and the re-intensification of Hurricane Danny near the NC/VA border in July 1997. Future studies will include data from the central Pacific in assessing the damage and high winds associated with Typhoon Paka in December 1997, and a severe weather outbreak along the southeast coast of Florida in February 1998.

EMPLOYEE ACTIVITIES

✦ EEO and Community Outreach

National Climatic Data Center employee Roger Winchell, and Cindy Maney of the Health Unit, coordinated the third Federal Building Blood Drive on February 10. There were 41 units of blood collected representing 137 percent of the goal set for this drive.

NCDC Participates in Science and Technology Week Expo '98

The National Climatic Data Center staffed a booth at the Science and Technology Week Expo '98, conducted by the Hughes Academy in Greenville, SC, on the evening of February 10, 1998. More than 500 students, parents, and staff visited the booth. The Hughes Academy is a math/science aligned magnet school. The purpose of the Expo was to inform the students and their parents of the different types of careers available in the sciences, especially meteorology. Other participants were the National Weather Service's Greer, SC, office; NBC Channel 4 Weather Team; the Southeast Regional Climate Center; and Clemson University.

NCDC Meteorologist Speaks to Continuing Education Class

National Climatic Data Center (NCDC) meteorologist Tom Ross was an invited speaker at the Blue Ridge Community College in Hendersonville, NC, on February 13, 1998. Mr. Ross gave a two-hour class presentation to about 50 people attending a continuing education class in meteorology and climatology. The presentation featured an overview of the mission and function of NCDC, the climatology of western North Carolina, and a basic synopsis of meteorology and severe weather.

NCDC Meteorologist Gives Garden Club Presentation

Mr. Tom Ross, of the National Climatic Data Center (NCDC), presented a talk at the February meeting of the Hendersonville Garden Club. The presentation focused on how western North Carolina's weather affects horticulture and vegetable gardening. Topics included: El Niño; tornadoes and hurricanes; frost/freeze statistics and their relationship to growing annuals/ perennials; the local "Thermal Belt;" and other local variations in climate that affect gardeners.

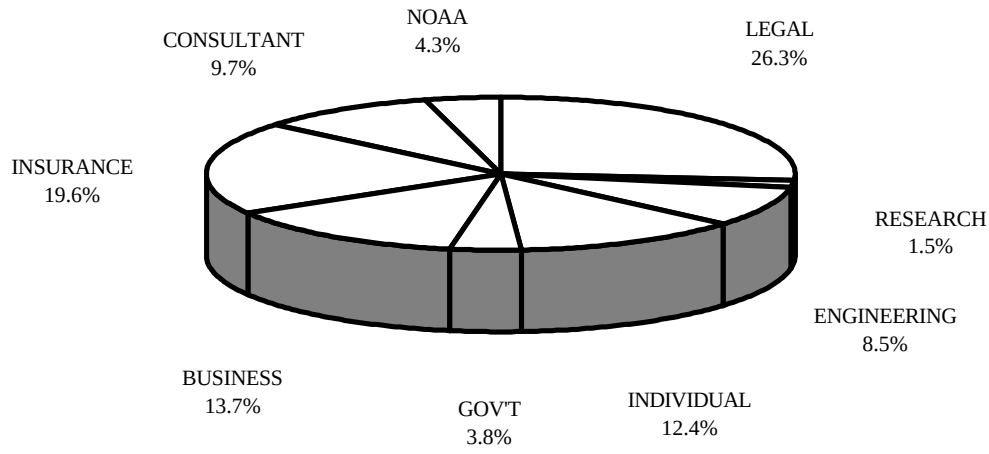
✦ Training

Employees Complete Oracle Training

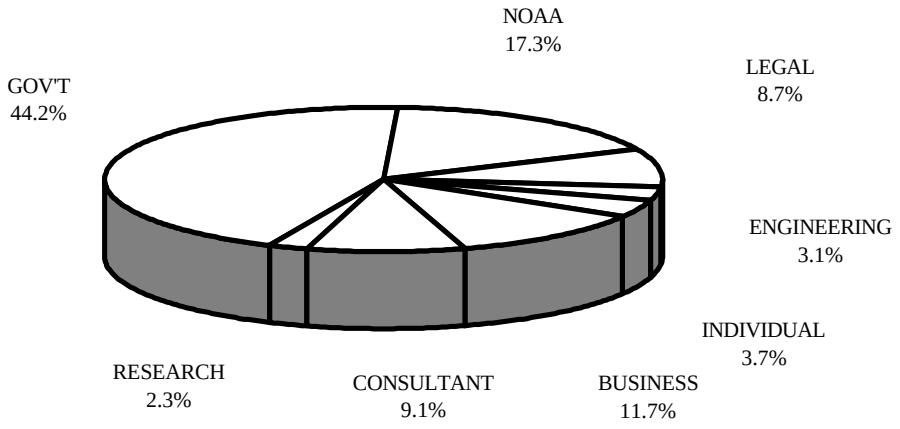
Eighteen National Climatic Data Center (NCDC) employees completed a one week (40 hour) introductory course for the Oracle relational database management system. The course included a review of the Oracle system, detailed usage of structured query language (SQL), the basics of building an Oracle database, and programming in Oracle using "procedures." A number of NCDC and National Oceanic and Atmospheric Administration National Data Center (NNDC) systems have been designed using Oracle or will be designed for Oracle over the next two years. Customer servicing (on-line and off-line) for the higher-usage data sets will be transitioned to an Oracle system during FY98-99.

The following charts and graphs show the latest National Climatic Data Center user and data statistics.

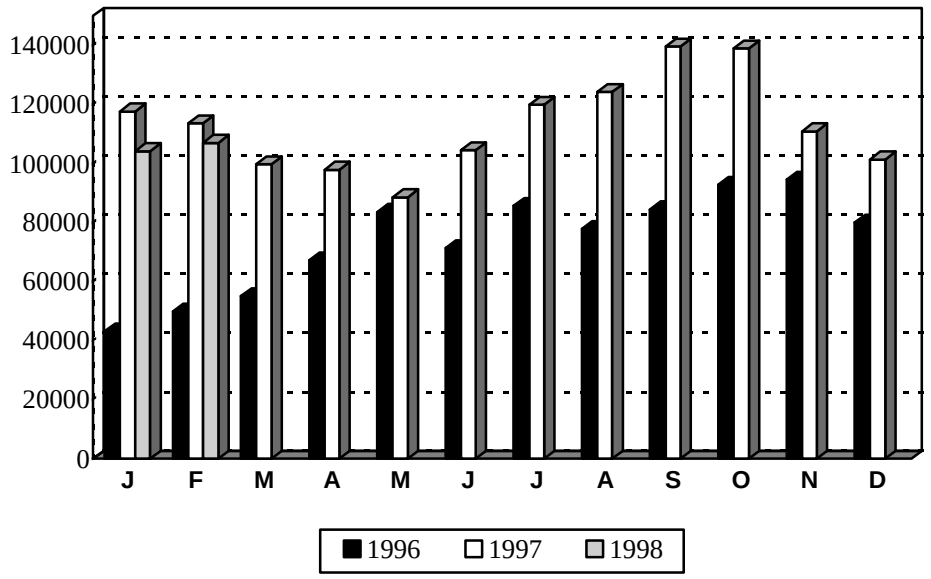
Customer Profile Based on Orders



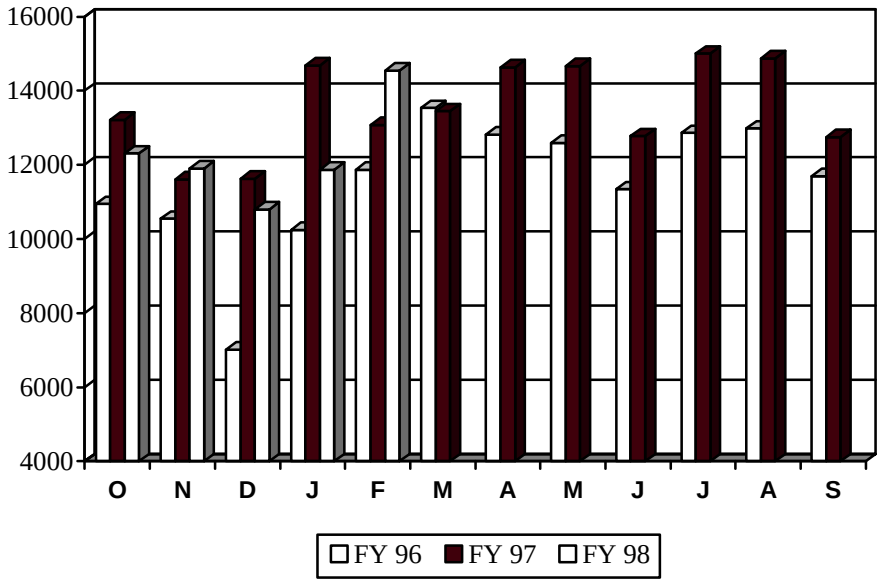
Customer Profile Based on Order Cost

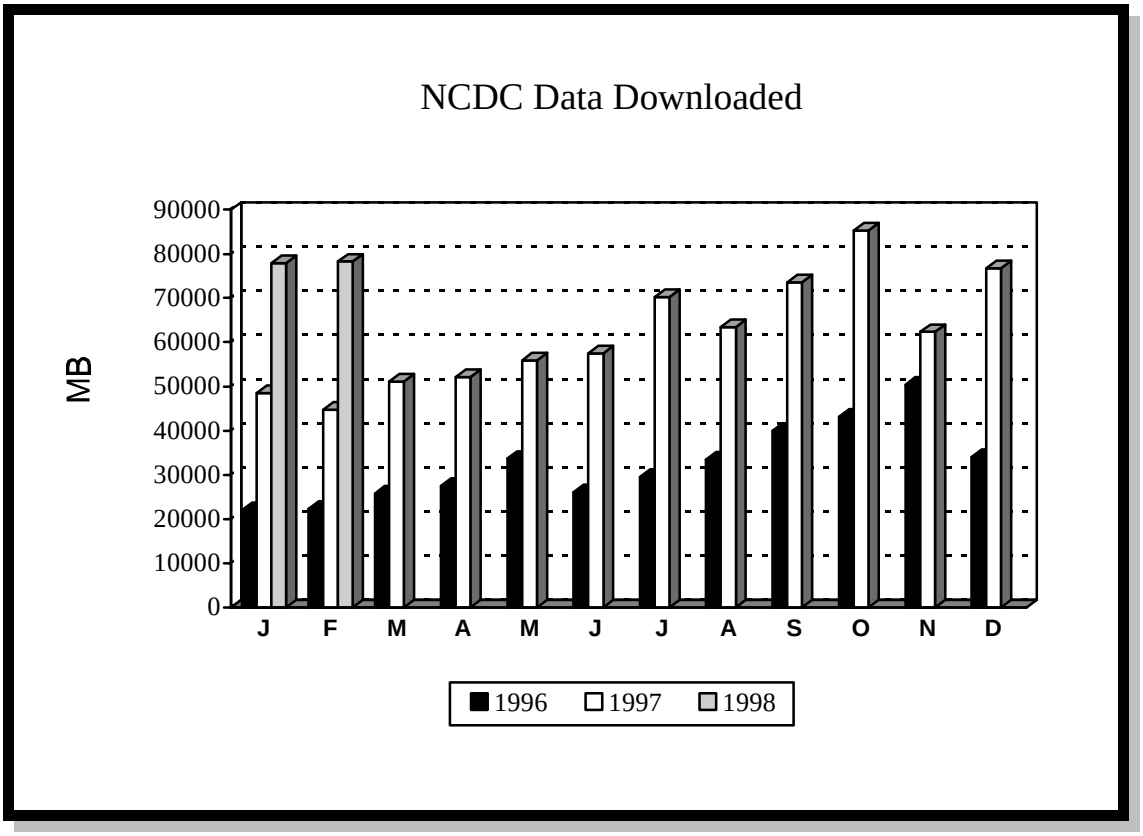


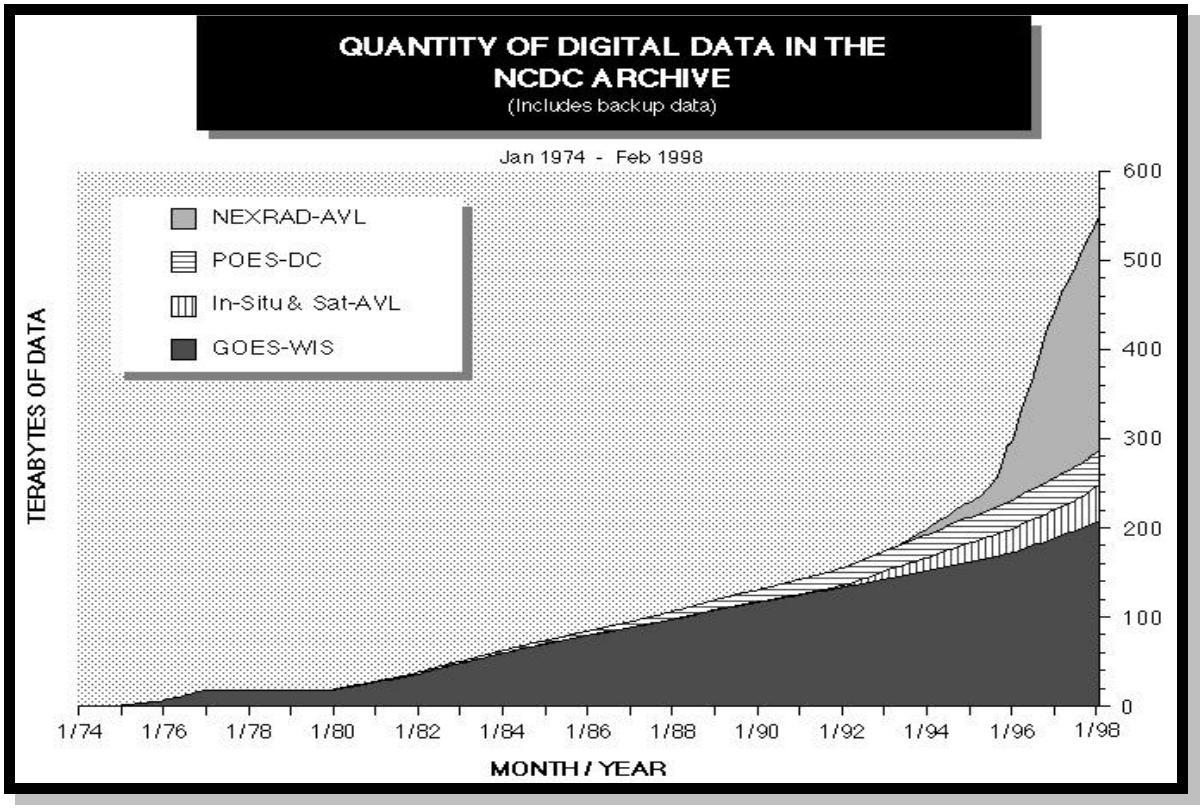
NCDC On-Line Users



NCDC Off-Line Customer Contacts




NCDC Data Downloaded
MB
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
J F M A M J J A S O N D
1996 1997 1998


QUANTITY OF DIGITAL DATA IN THE NCDC ARCHIVE
(Includes backup data)
Jan 1974 - Feb 1998
NEXRAD-AVL
POES-DC
In-Situ & Sat-AVL
GOES-WIS
TERABYTES OF DATA
600
500
400
300
200
100
0
1/74 1/76 1/78 1/80 1/82 1/84 1/86 1/88 1/90 1/92 1/94 1/96 1/98
MONTH / YEAR